

Domestic Linkage Optical Modules



Overview

The Most Comprehensive Guide Of Optical Modules Explore the ultimate guide to optical modules. Learn types, functions, performance metrics Domestically prod.

Key Takeaways

Domestic linkage optical modules are increasingly produced locally, driven by policy support, technological breakthroughs, and supply chain resilience, with innovations like LPO enabling low-power, high-performance optical interconnects. Domestic Production Trends

China is actively promoting the localization of optical modules to reduce import dependency and enhance supply chain security. National policies, such as the Ministry of Industry and Information Technology's guidelines on manufacturing reliability, explicitly support domestic production of optical communication devices . Regional initiatives encourage collaboration between industry, academia, and research institutions to develop high-end optical chips. As a result, domestic manufacturers have achieved over 65% localization for medium- and low-speed optical chips below 10G, and companies like ETU-LINK have built full production lines with on-time delivery rates exceeding 99% .

Technological Advancements



Domestic optical modules have reached performance levels comparable to international standards. For example, ETU-LINK's second-generation 100G QSFP28 ZR4 80KM module uses four-channel 28G NRZ wavelength division multiplexing, achieving 80 km transmission with power consumption below 5.5W . Core chip localization has progressed significantly, with mass production of 25G/50G DFB and EML lasers and a self-sufficiency rate for 25G+ laser chips exceeding 50% . High-end DSP chips remain a critical area for further domestic R&D.

Linear Pluggable Optics (LPO)

LPO technology is a key innovation in optical interconnects, removing DSPs from the module to reduce power consumption and latency . In LPO modules:

- The transmitter uses a high-linearity driver to directly modulate the optical signal.
- The receiver employs a high-linearity transimpedance amplifier (TIA) for photoelectric conversion.
- Signal equalization and compensation are handled by the host-side SerDes. This architecture can reduce power consumption by 30-50% per module and significantly lower latency, making it suitable for high-speed data center and AI computing deployments . However, LPO modules currently face challenges in multi-vendor interoperability, error correction, and maintaining signal integrity at speeds beyond 112G, requiring ongoing optimization.

Advantages of Domestic Linkage Optical Modules

- Supply Chain Resilience: Reduced reliance on imports mitigates geopolitical and trade risks .
- Cost and Service Efficiency: Domestic production offers competitive pricing and faster technical support .
- Technological Competitiveness: Modules now support high-speed transmission with low power consumption, comparable to international solutions .
- Scenario Adaptation: Domestic manufacturers provide end-to-end capabilities from chip selection to module integration and deployment in diverse network scenarios .

Outlook

The domestic optical module industry is expected to continue growing, with further localization of high-end chips, expansion of LPO and NPO architectures, and enhanced ecosystem standardization. These developments will strengthen the domestic supply chain, support large-scale 5G and AI deployments, and gradually reduce dependency on foreign suppliers .

Article Content

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right

Domestically produced chips in optical modules | Weyland

These efforts aim to accelerate the localization of optical module chips, reduce import dependence, and strengthen the

Analysis of the Trend Toward Domestic Production of Optical Modules

Driven by the explosive growth of AI computing power and the large-scale application of 5G, optical modules, as a core component

Which domestic optical module and optical chip manufacturer stands

With domestic substitution trends, silicon photonics, and Co-Packaged Optics (CPO), the strength of domestic optical

Optical Modules Ignite Aluminum Nitride Demand: The

Several domestic frontrunners have successfully penetrated the supply chains of top-tier global optical module makers

Domestic Optical Module

Domestic optical modules for chips are essential components in modern communication systems, facilitating high

Optical Modules in General-Purpose Computing Scenarios

Huawei offers a comprehensive portfolio of pluggable StarryLink optical modules for data center networks, with various models

Optical Module Chip Market 2025

The optical module chip market exhibits a fragmented yet competitive structure with global technology providers, semiconductor

Listed companies specialising in optical chips and optical modules

□□ 3. Accelerated domestic substitution of optical chips In the future, DSP and silicon photonics chips will become the

Domestic Optical Module

Domestic optical modules for chips are critical components in data communication and telecommunication industries,

Optical Module Industry Statistics 2026

Our in-depth market data report on optical module industry. Explore verified statistics and the latest research.

Chinese optical module makers slump after report on planned US

Shares of Chinese optical module makers such as Zhongji Innolight slumped on Wednesday after a Reuters report that

Marvell Supplies Optical Connectivity Chips at Heart of AI Data Centers

Marvell Technology supplies optical connectivity chips for AI data centers, raising its interconnect growth outlook to

Optical Interconnect Market Size, Share & Trends

The global optical interconnect market size is valued at \$15.38 billion in 2025 & is projected to grow from \$17.12 billion

FCC proposes import ban on Chinese optical transceivers — blockade ...

The FCC is drafting a proposal that would expand its list of equipment and services covered by the Secure Networks

10 companies in the optical transceiver industry chain 2024

The rapid development of AIGC has promoted the demand for 800G optical modules, and the entire industrial chain

From optical modules to chips -

The competitiveness of optical modules also largely hinges on the synergy of the complete upstream industrial chain,

Standing in the Light: A Comprehensive Guide to the Optical Module

"Standing in the Light: Understanding the Optical Module and CPO Industry Chain"
This article analyzes the critical role

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